Remarks/Arguments

Reconsideration of this application is requested.

Information Disclosure Statement

The Action notes that the listing of references in the specification is not a proper information disclosure statement. Enclosed is a proper Information Disclosure Statement submitting Japanese patent publication nos. 02-001813 and 08-320664 to the attention of the Office.

Claim Rejections – 35 USC 102

Claims 1-15 are rejected as anticipated by US Patent No. 6,437,767 (Cairns). Cairns is directed to an active matrix display incorporating a part-line-at-a-time driving scheme, wherein a portion of display electrodes on a row of a display image is enabled at a time. (Cairns; Col. 5, lines 4-8). According to Cairns, a first group of control elements along a row of a display image is enabled for a first subperiod of a line period, and a second group of control elements on the same row is enabled for a second subperiod of the same line period. (See, Cairns; Col. 4, lines 28-60).

The present invention, by contrast, is directed to a display driver that alternately activates two scan line drivers via two set of controls. Y driver 1 activates even scan lines C0, C2,..., C14 for a line period, and Y driver 2 activates odd scan lines C1, C3,..., C15 for the next line period. (Specification; Figures 1 and 3). Each active scan line enables all of the scan electrodes per line (row) of the display image.

This difference distinguishes the present invention from Cairns. Cairns does not disclose or suggest an active scan line wherein the scan line enables all of the scan electrodes in one row of the display image. In order to clarify this distinguishing feature, independent claims 1, 3, 5 and 11 are each amended to recite "the first group of scanning electrodes displays an entire first row of the display image" and "the second group of scanning electrodes displays an entire second row of the display image".

Cairns provides a matrix display having a scan line driver circuit 42 that applies scan voltages S1...SN to scan lines 41. A control signal A is applied to a left hand group of pixels in scan lines 41 by a left hand group of data lines 43, and a control signal B is applied to a right hand group of pixels in scan lines 41 by a right hand group of data lines 43. Each scan line 41 is activated for a line period. Within the line period, control signal A is activated for a first subperiod and control signal B is activated for a second subperiod. For the first subperiod, the left hand group of pixels on a scan line 41 is enabled by the scan line and the left hand group of data lines. For the second subperiod, the right hand group of pixels on a scan line 41 is enabled by the scan line and the right hand group of data lines (Cairns, col. 7, lines 14-37 and Figures 7 and 8).

In another embodiment, Cairns provides a matrix display having two scan line drivers 53 and 54 and one group of data lines. The left scan line driver 53 generates half-scan lines L1-LN, and the right scan line driver 54 generates half-scan lines R1-RN. For each subperiod, a half-scan line is active and enables one half of the pixels per row of display image (Cairns, col. 8, lines 26-45 and Figs 9-10).

In the present invention, by contrast, two scan line drivers are alternately activated via two set of controls. Y driver 1 activates even scan lines C0, C2,...,C14 for a line period, and Y driver 2 activates odd scan lines C1, C3,...,C15 for the next line period. (Specification; Figures 1 and 3). Each active scan line enables all of the scan electrodes on the line (row) of the display image. Thus, as set forth in claim 1, a first scanning signal is supplied to a first group of scanning electrodes corresponding to an entire row of a display image, and a second scanning signal is supplied to a second group of scanning electrodes corresponding to an entire row of a display image.

Cairns does not teach or suggest this feature. Cairns specifically states "In each of the described embodiments the analogue or digital data line driver circuits operate with only a single line memory by utilising a part-line-at-a-time driving scheme in which **the pixels along a row are addressed in two or more groups**

during the line period so that, during a first subperiod of the line period, the input data is sampled by the data line driver circuit to produce data signals for a first group of pixels along the row and, during a second subperiod of the line period, the data signals are applied to the first group of pixels whilst the data line driver circuit samples the input data to produce data signals for a second group of pixels along the row." (*Cairns; Col. 6, lines 48-59*). Moreover, Cairns claims that the part-line-at-a-time driving scheme is advantageous relative to a line-at-a-time driving scheme. (*Cairns; Col. 4, line 62 – Col. 5, line 11*).

For these reasons, Cairns cannot anticipate claims 1, 3, 5 and 11, as amended, or any claims dependent thereon. The rejections under 35 USC 102 should be withdrawn.

Claim Rejections – 35 USC 112

Claims 3 and 5 are rejected under 35 USC 112, second paragraph, for failing to provide proper antecedent basis for "the liquid crystal panel" (claim 3) and "the timing control circuit" (claim 5). In response, claims 3 and 5 are amended to corrected the noted problems.

Conclusion

This application is now in condition for allowance. The Examiner is invited to telephone the undersigned to resolve any issues that remain after entry of this amendment. Any fees due with this response may be charged to our Deposit Account No. 50-1314.

Respectfully submitted,
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